

Recovery Plan Action Status

Plan Name: Higgins Eye Pearlymussel

Plan Status: Final Revision 1

Plan Date: 14-Jul-04

Lead Agency: USFWS

Lead Office: Twin Cities Ecological Services Field Office

(612)
725-3548)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Higgins eye (pearlymussel) (Lampsilis higginsii)	1	1.1.1	Develop strategies to prevent zebra mussel infestation	Ongoing Current	FY 2000 - FY 2004		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Administrative	
Higgins eye (pearlymussel) (Lampsilis higginsii)	1	1.1.2	Monitor zebra mussel populations at Essential Habitat Areas that are currently infested.	Ongoing Current	FY 2000 - FY 2004		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Field Assistance	

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Higgins eye (pearl mussel) (<i>Lampsilis higginsii</i>)	1	1.1.3	Develop and implement a response plan for <i>L. higginsii</i> in Essential Habitat Areas	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	Year 2 and 3 cost only if plan is implemented
Higgins eye (pearl mussel) (<i>Lampsilis higginsii</i>)	2	1.2.1	Develop a uniform protocol for collecting information for populations of <i>L. higginsii</i> .	Ongoing Current	FY 2007		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Field Assistance	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.2.2	Answer the following three questions to facilitate the implementation of this recovery plan: 1) What would constitute sufficient evidence of a strong juvenile year class of L. higginsii? 2) What methods should be used to evaluate the strength of juvenile year classes of L. higginsii? 3) How many strong juvenile year classes should be detected to determine that reproduction is sufficient to allow for stable or growing populations of L. higginsii?	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.2.3	Develop a central database of information based on the protocol developed in task 1.2.1	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.2.4	Develop and implement a long-term monitoring plan at Essential Habitat Areas.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Research: Population Surveys	Internal Technical Assistance	
Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.3.1	Evaluate the ten Essential Habitat Areas recommended in this plan based on the best available scientific information.	Ongoing Current	FY 2007		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (<i>Lampsilis higginsii</i>)	2	1.3.2	Identify new Essential Habitat Areas.	Ongoing Current	FY 2007		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Technical Assistance	
Higgins eye (pearlymussel) (<i>Lampsilis higginsii</i>)	2	1.3.2.1	Survey Pool 10 to determine whether additional Essential Habitat Areas may be identified in this pool.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.3.2.2	Examine a site near river mile 454, Muscatine, IA, for inclusion as an Essential Habitat Area.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.3.2.3	Examine a site near river mile 556.4, Bellevue, IA, for inclusion as an Essential Habitat Area.	Complete	FY 2000 - FY 2004	FY 2005	U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Research: Population Surveys	Species Expert	Data collected in 2004 indicated that this area does not warrant addition to list of Higgins eye Essential Habitat Areas.

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.3.2.4	Examine shallow shoreline habitats in Pool 14 to determine if these habitats may currently support significant unknown populations of L. higginsii.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.3.3	Estimate population size in Essential Habitat Areas.	Ongoing Current	FY 2000 - FY 2004		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Research: Population Surveys	Internal Technical Assistance	Est. project cost for years 1-3 to be determined. The Recovery Team was not able to estimate the costs of these tasks.

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Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.3.4	Estimate recruitment in Essential Habitat Areas.	Ongoing Current	FY 2000 - FY 2004		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Research: Population Surveys	Internal Technical Assistance	Est. project cost for years 1-3 to be determined. The Recovery Team was not able to estimate the costs of these tasks.
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.3.5	Estimate the existing genetic variability of the populations in Essential Habitat Areas.	Complete	FY 2000 - FY 2004	FY 2006	U.S. Army Corps of Engineers	Research: Demographic Studies	Contract	
Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.3.6	Maintain an up-to-date list of Essential Habitat Areas and the supporting data for each at the Service's Twin Cities Field Office and make this information, or a summary thereof, available through the internet.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division	Management: General	Internal Technical Assistance	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.4.1	Determine the potential impact of construction projects on Essential Habitat Areas.	Not Started			U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Habitat Conservation Program	Work type not yet selected	Labor type not yet selected	Est. project cost for years 1-3 to be determined. The Recovery Team was not able to estimate the costs of these tasks.
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.4.2	Determine alternatives to harmful construction practices.	Not Started			U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Habitat Conservation Program	Work type not yet selected	Labor type not yet selected	Est. project cost for years 1-3 to be determined. The Recovery Team was not able to estimate the costs of these tasks.

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.4.3	Continue monitoring the impacts of commercial navigation activities on Essential Habitat Areas.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Habitat Conservation Program	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.1.1	Identify suitable surrogates species for L. higginsii for use in laboratory toxicity tests.	Ongoing Current	FY 2000 - FY 2004		U.S. Geological Survey, Biological Resources Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality	Research	Internal Technical Assistance	This is being done via the Columbia USGS lab, which is studying toxicity of different compounds on different genera of freshwater mussels.
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.1.2	Determine necessary handling protocols and culturing requirements of each life history stage to be tested.	Ongoing Current	FY 2000 - FY 2004		U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Environmental Protection Agency	Research	Internal Technical Assistance	Columbia USGS lab investigating this.
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.1.3	Document existing toxicity data (including test type) available for the species and/or its surrogates	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality	Work type not yet selected	Labor type not yet selected	Columbia USGS lab.

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.1.4	Identify inorganic and organic contaminant compounds and mixtures present in L. higginsii Essential Habitat Areas. Use these data to determine realistic range of environmental concentrations for use in laboratory exposures.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.1.5	Design and complete acute and chronic laboratory toxicity tests based on Tasks 1.5.1.1 through Task 1.5.1.4. Include glochidium, juvenile and adult life stages.	Ongoing Current	FY 2000 - FY 2004		U.S. Geological Survey, Biological Resources Division, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Division of Environmental Quality	Research	Internal Technical Assistance	Columbia USGS lab
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.1.6	Document the various modes of contaminant uptake for L. higginsii (or suitable surrogate species), emphasizing the relative significance of uptake from food sources, surface water, pore water, and sediments.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Geological Survey, Water Resources Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.1.7	Determine the biological effect and significance of contaminant residues documented in mussel tissues.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Geological Survey, Water Resources Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.2.1	Collect sediment and pore water from areas identified as currently supporting viable L. higginsii populations and proposed reestablishment areas; analyze for a range of organic and inorganic contaminants.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Geological Survey, Water Resources Division, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Division of Environmental Quality	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.5.2.2	Develop and implement water quality criteria that would conserve Higgins eye; these criteria should be directly or indirectly protective of sediment and pore water quality, as necessary to conserve Higgins eye.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearl mussel) (Lampsilis higginsii)	3	1.5.3.1	Coordinate with local land use planning and technical assistance offices to increase awareness and need to protect water quality in L. higginsii Essential Habitat Areas and relocation areas.	Not Started			U.S. Department of Agriculture, National Park Service, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Partners for Fish and Wildlife, U.S. Fish and Wildlife Service, Division of Environmental Quality, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearl mussel) (Lampsilis higginsii)	2	1.6.1	Promote the use of double hull barges.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division, United States Coast Guard	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.6.2.1	Coordinate with state and Federal natural resource trustees responsible for spill planning and response. Identify L. higginsii water quality requirements and Essential Habitat Area information, as well as applicable facility, local, state, Federal, and area spill contingency planning efforts	Not Started			National Park Service, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Law Enforcement Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality, United States Coast Guard, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (<i>Lampsilis higginsii</i>)	3	1.6.2.2	Identify potential response actions that may prevent or minimize impacts to <i>L. higginsii</i> (including habitat) in the event of a spill of oil or hazardous material. Incorporate into applicable response plans as necessary.	Not Started			National Park Service, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Law Enforcement Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Division of Environmental Quality, United States Coast Guard, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearl mussel) (Lampsilis higginsii)	3	1.6.2.3	Identify potential L. higginsii habitat restoration and compensation measures that state and Federal natural resource trustees may consider under Natural Resource Damage Assessment responsibilities in the event of a spill of oil or hazardous materials. Incorporate into applicable response plans as necessary.	Not Started			National Park Service, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Law Enforcement Division, U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Fish and Wildlife Service, Division of Environmental Quality, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearl mussel) (Lampsilis higginsii)	2	1.7.1	Develop regulations to prevent mussel harvest in Essential Habitat Areas.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.7.2	Review existing harvest regulations and make recommendations to the USFWS and States on any regulations needed outside of Essential Habitat Areas.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	2	1.7.3	Enhance enforcement of existing regulations.	Not Started			U.S. Fish and Wildlife Service, Law Enforcement Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	1.8.1	Educate commercial navigation industry, commercial mussel harvesters, and state transportation agencies on the nature of endangered mussels.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Division of External Affairs, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	2.1.1	Estimate the population size in non-Essential Habitat Areas.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	Combined with 2.1.2
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	2.1.2	Estimate recruitment in non-Essential Habitat Areas	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	Est. project cost for years 1-3 combined with 2.1.1

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	2.1.3	Estimate the genetic variability of the populations in non-Essential Habitat Areas.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	In conjunction with 2.11
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	2.2.1	Determine the best method to increase population size.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Field Assistance	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	2.2.2	Utilize the best method to increase population size.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Field Assistance	

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Higgins eye (pearlymussel) (Lampsilis higginsii)	3	2.2.3	Assess the efficacy of the method used.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Field Assistance	
Higgins eye (pearlymussel) (Lampsilis higginsii)	2	2.3.1	Rank historic habitats for the likelihood of zebra mussel colonization.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: General	Internal Technical Assistance	Combine with 2.3.2
Higgins eye (pearlymussel) (Lampsilis higginsii)	2	2.3.2	Examine habitat suitability and fish assemblage for reintroduction.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: Reintroduction	Internal Field Assistance	Combine with 2.3.1

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Higgins eye (pearlymussel) (Lampsilis higginsii)	2	2.3.3	Develop a reintroduction/augmentation plan and utilize best method(s) of reintroduction.	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Endangered Species Division, U.S. Army Corps of Engineers, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Management: Reintroduction	Internal Technical Assistance	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	2.4.1	Examine the morphological, conchological and genetic differences between L. higginsii and L. abrupt.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Endangered Species Division, Minnesota DNR, Div. of Ecological Services; Wisconsin DNR, Bureau of Endangered Resources; Iowa DNR, Div. of State Parks, Recreation and Preserves; Illinois DNR, Div. of Natural Heritage, Missouri DOC	Work type not yet selected	Labor type not yet selected	
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	3	Update, revise, or add to the plan to keep it current and useful.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division	Work type not yet selected	Labor type not yet selected	No specific costs anticipated Years 1-3
Higgins eye (pearlymussel) (Lampsilis higginsii)	3	4	Develop a plan to monitor L. higginsii after it is removed from the list of Endangered Species.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division	Work type not yet selected	Labor type not yet selected	No specific costs anticipated Years 1-3